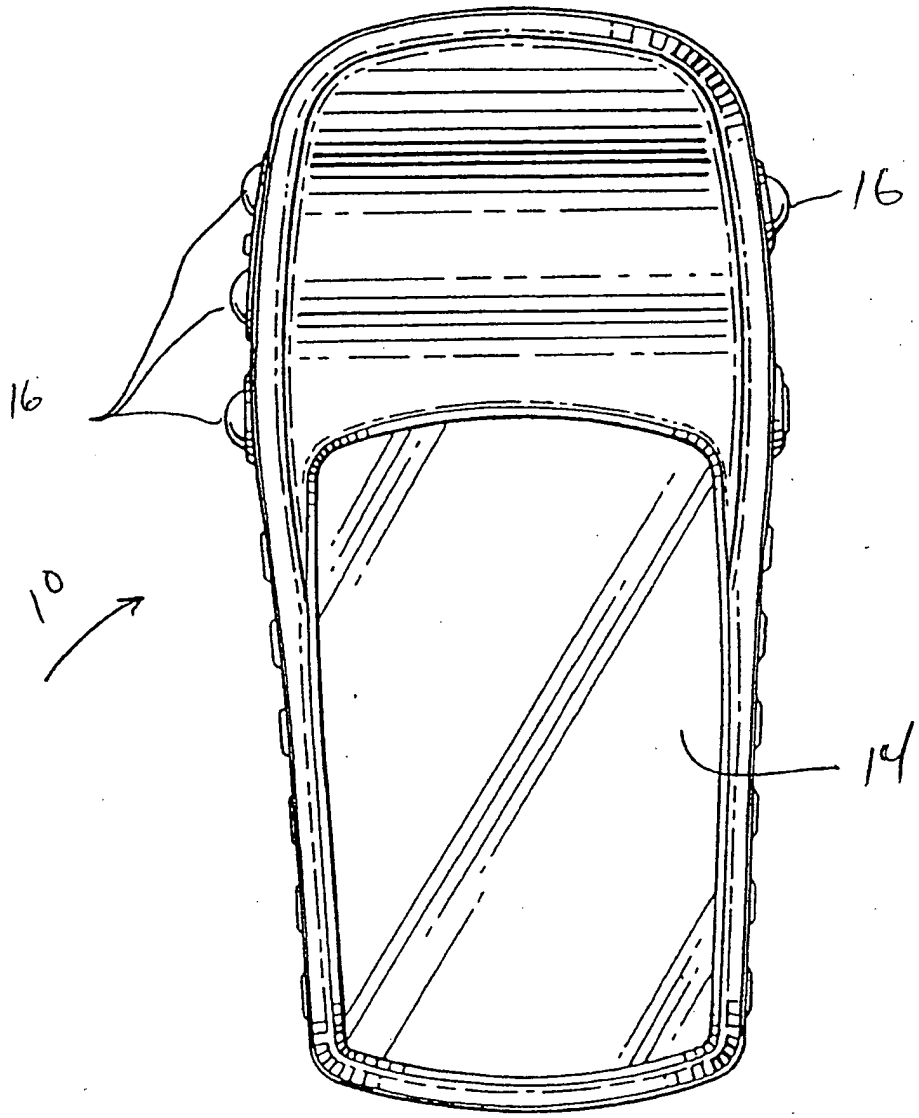
Fig.1.



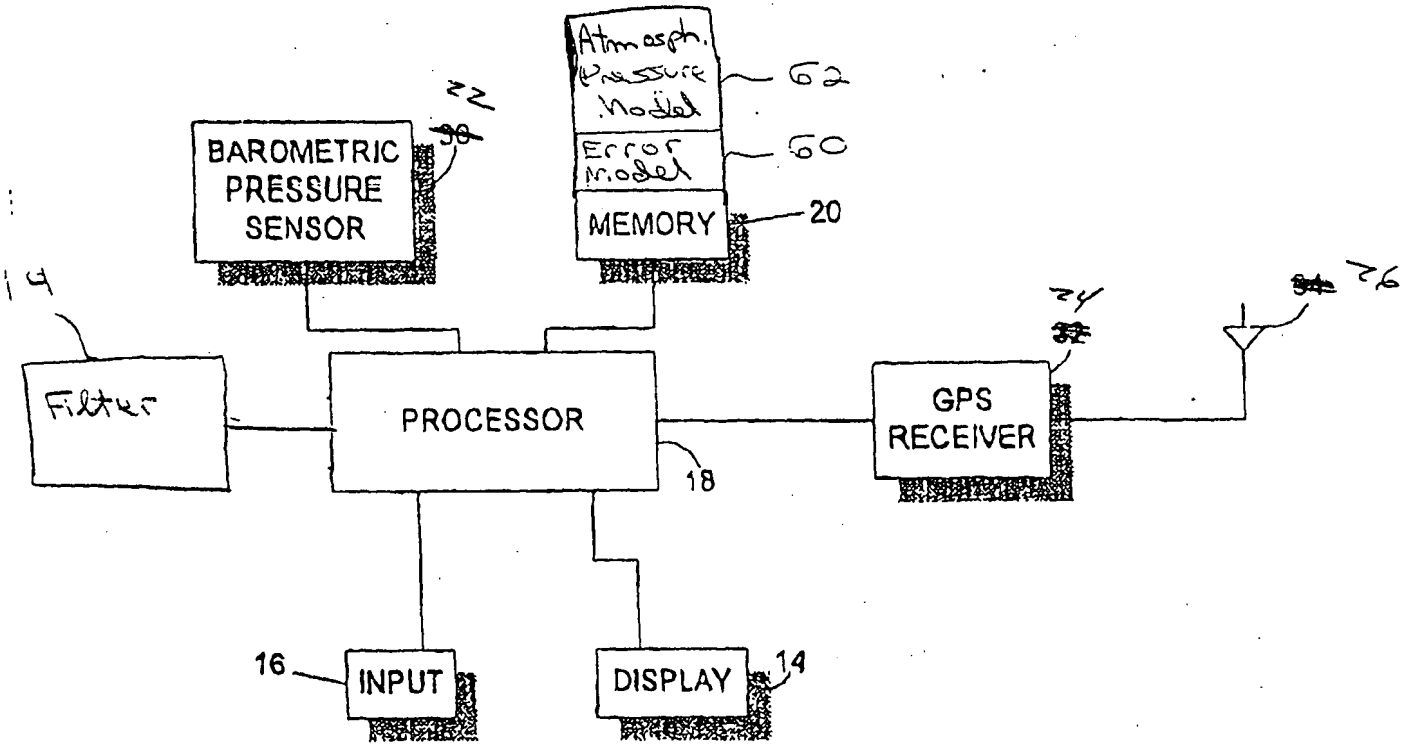
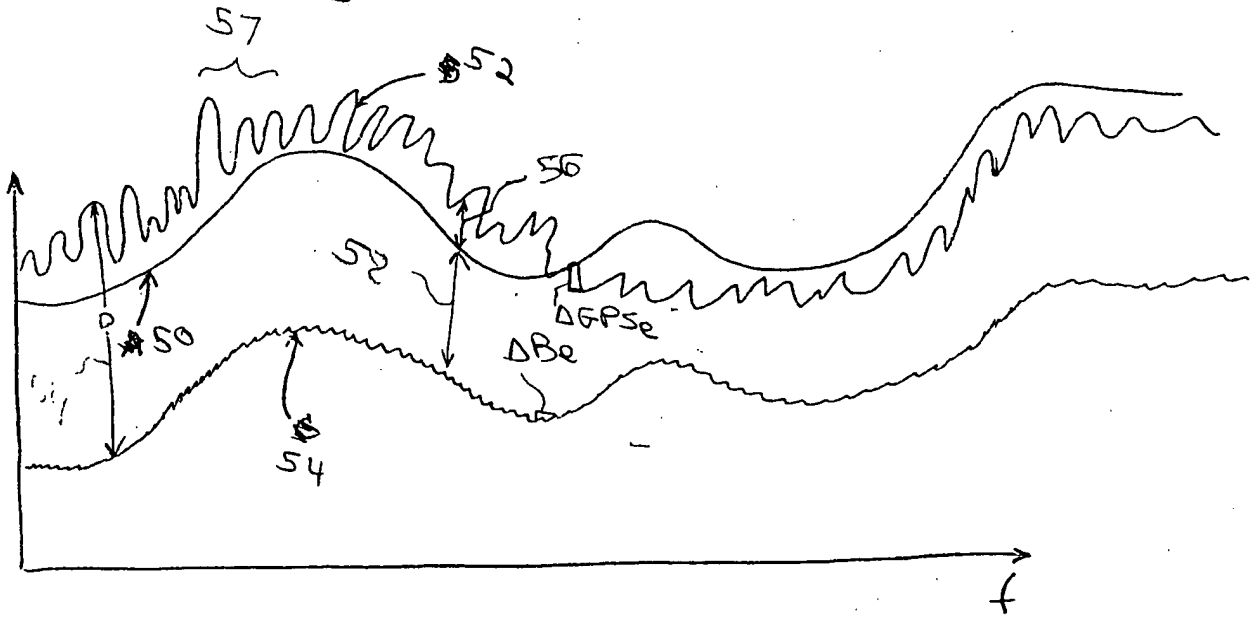

Atmosph. Pressure Model
62
Error Model
60
MEMORY
20
BAROMETRIC PRESSURE SENSOR
22
30
Filter
PROCESSOR
18
GPS RECEIVER
24
32
26
34
INPUT
16
DISPLAY
14

FIG. 2



A: USER'S ELEVATION TRAJECTORY

B = GPS ELEVATION READING

C = BAROMETRIC ALTIMETER READING

FIG 3

Docket No. 050205

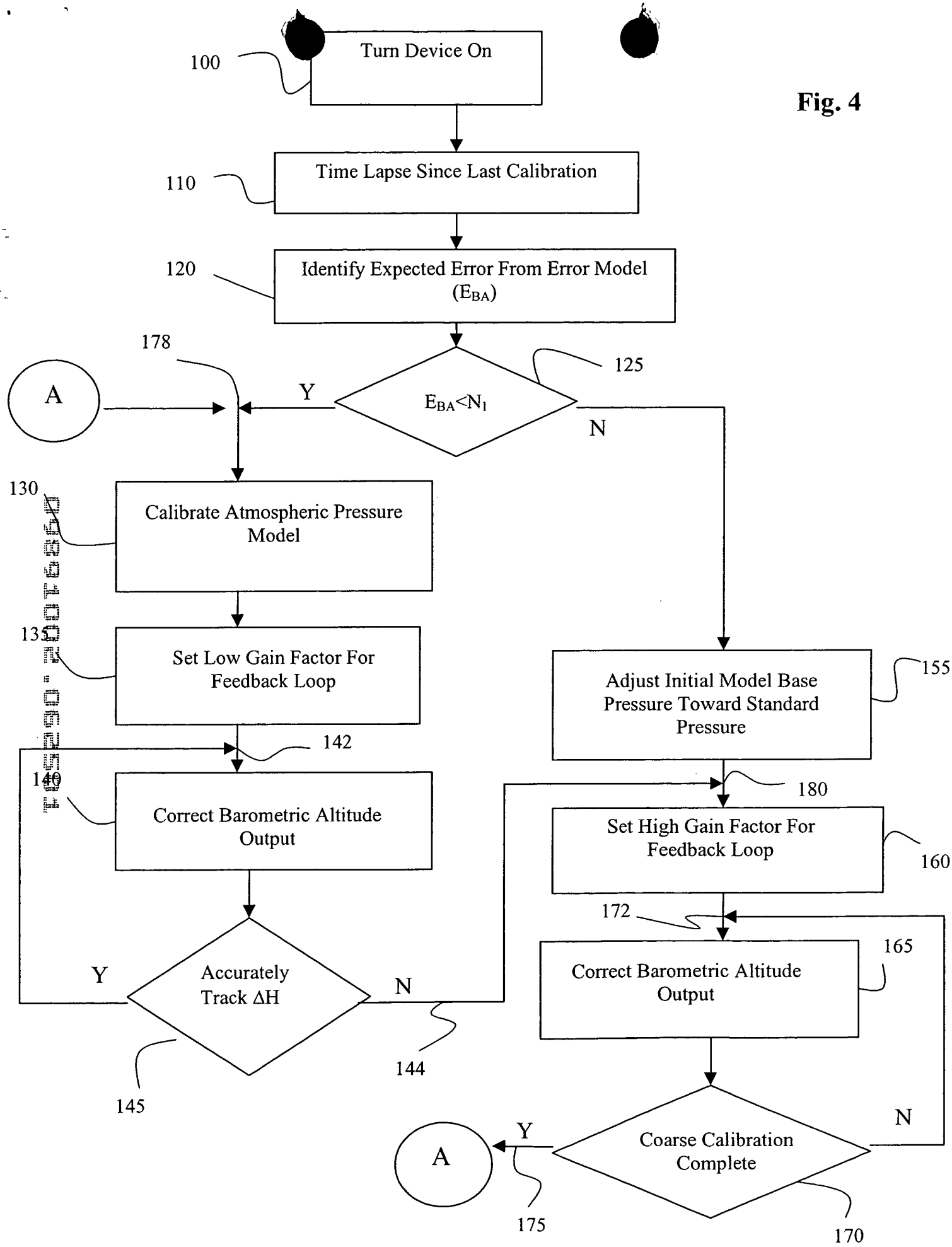

Turn Device On
100
Time Lapse Since Last Calibration
110
Identify Expected Error From Error Model (E_{BA})
120
178
125
A
Y
$E_{BA}<N_1$
N
130
Calibrate Atmospheric Pressure Model
135
Set Low Gain Factor For Feedback Loop
142
140
Correct Barometric Altitude Output
Y
Accurately Track ΔH
N
145
144
155
Adjust Initial Model Base Pressure Toward Standard Pressure
180
Set High Gain Factor For Feedback Loop
160
172
165
Correct Barometric Altitude Output
Coarse Calibration Complete
Y
N
A
175
170

Fig. 4

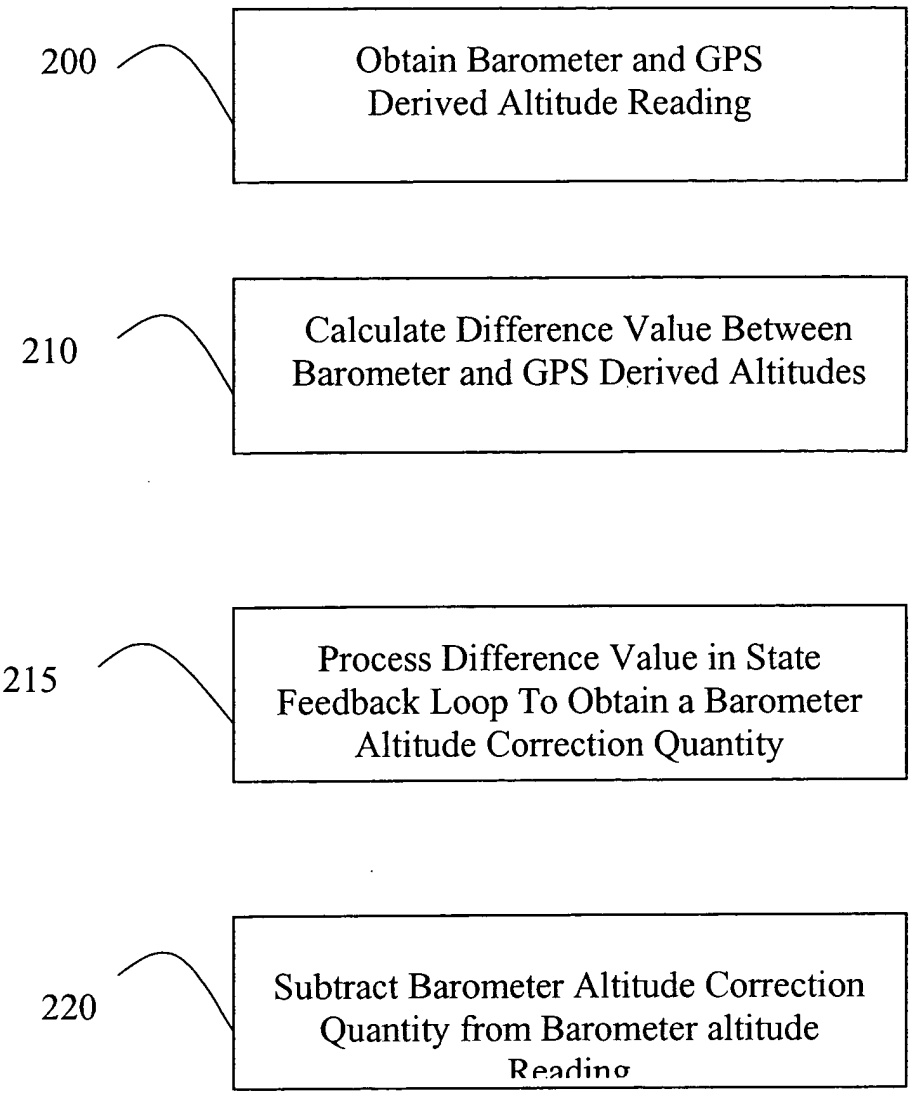

200
Obtain Barometer and GPS Derived Altitude Reading
210
Calculate Difference Value Between Barometer and GPS Derived Altitudes
215
Process Difference Value in State Feedback Loop To Obtain a Barometer Altitude Correction Quantity
220
Subtract Barometer Altitude Correction Quantity from Barometer altitude Reading

Fig. 5